AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A miniature confocal optical head ~~(4)~~ for a confocal imaging system, or for an endoscopic confocal imaging system, said head comprising:

   a point source ~~(2*b*)~~ for producing an excitation beam;

   an optical system comprising a first optical device~~s (12, 13)~~ and a second optical device capable of causing said excitation beam to converge ~~into~~ at an excitation point ~~(S)~~ situated in a subsurface plane ~~(P) relative to a surface of~~ in a specimen, said plane being perpendicular to an optical axis ~~(A)~~ of the optical head; and

   a scanning mechanism ~~device~~ for scanning said excitation point so as to describe a field of view in said subsurface plane in two perpendicular scanning directions, wherein the scanning mechanism comprises a rapid line scanning device and a slow column scanning device,

   wherein at least one of the rapid line scanning device and the slow column scanning device comprises a micro-electro-mechanical system (MEMS) ~~mechanical micro-system MEMs (14*a-b*)~~ capable of moving at least one of the first optical device and the second optical device ~~in translation along a chosen displacement (De) of at least one of the optical devices (12, 13) which is mobile~~ in a direction perpendicular to said optical axis ~~(A) so as to obtain at least one of said scanning directions~~.

2. (Currently Amended) The optical head according to claim 1, wherein the slow column scanning device operates at ~~corresponds to~~ a frequency of ~~approximately~~ about 10 to 15 Hz and the rapid line scanning device operates at [[to]] a frequency of ~~approximately~~ about 4 kHz, so as to produce an image in real time.

3. (Currently Amended) The optical head according to claim 1, wherein the ~~MEMs (14*a-b*) are~~ MEMS is capable of cooperating with the first optical device or the second optical device ~~mobile optical devices (12, 13)~~ in a diametrically opposite manner and alternately.

4. (Currently Amended) The optical head according to claim 1, wherein the excitation ~~optical~~ beam produced by the point source ~~(2*b*)~~ is divergent, the ~~optical devices (12, 13) being a~~ first optical device ~~(12)~~ is capable of transforming said divergent beam into a parallel or slightly divergent beam and [[a]] the second optical device ~~(13)~~ is capable of forming the subsurface focusing point ~~(S)~~.

5. (Currently Amended) The optical head according to claim 4, wherein the first optical device ~~(12)~~ is mobile, capable of carrying out optical beam slow column scanning.

6. (Currently Amended) The optical head according to claim 1, wherein the first and second optical devices ~~(12, 13)~~ are mobile, each capable of being moved in [[the]] a direction perpendicular to the optical axis so that each defines a scanning direction.

7. (Currently Amended) The optical head according to claim 1, wherein the point source ~~(2*b*)~~ is mobile, fixed to a piezoelectric device ~~(11)~~ capable of moving the excitation beam emitted by said point source with a displacement ~~(D_L)~~ chosen so as to define a second scanning direction.

8. (Currently Amended) The optical head according to claim 7, wherein the second scanning direction and characteristics of the piezoelectric device ~~(11)~~ correspond to rapid line scanning.

9. (Currently Amended) The optical head according to claim 8, wherein the piezoelectric device comprises a bimorphic piezoelectric positioner ~~(11)~~ extending along ~~according to~~ the optical axis ~~(A)~~ of the head, said point source ~~(2*b*)~~ being fixed on one face of said positioner at a front end of the positioner facing the first and second optical devices ~~(12, 13)~~.

10. (Currently Amended) The optical head according to claim 1, ~~wherein the optical head comprises~~ further comprising a device for modifying a depth of the subsurface plane ~~(P)~~ in the specimen.

11. (Currently Amended) The optical head according to claim 10, wherein the device for modifying the depth of the subsurface ~~observation~~ plane ~~(P)~~ in the specimen comprises an

MEMS ~~comprise micro-mechanical MEMs (16*a b*)~~ capable of moving the second optical device~~s (13)~~ along the optical axis ~~(A)~~ of the optical head.

12. (Currently Amended) The optical head according to claim 11, wherein the MEMS is ~~MEMs (16*a b*) are~~ capable of moving the second optical device ~~(13)~~ in order to carry out a movement ~~(Z)~~ along an optical axis of the excitation beam.

13. (Currently Amended) The optical head according to claim 10, wherein the device for modifying the depth of the subsurface ~~observation~~ plane ~~(P)~~ comprise a device adapted for modifying a radius of curvature of one of the first and second optical devices ~~(12, 13)~~.

14. (Currently Amended) The optical head according to claim 1, wherein ~~the optical head comprises a terminal part of~~ the point source ~~(2*b*)~~ comprises an optical fibre capable of guiding an excitation signal from an external source, wherein an emergent beam from [[an]] the optical fibre constituting the excitation beam ~~point source~~.

15. (Currently Amended) The optical head according to claim 14, wherein the optical fibre is single-mode with a core diameter adapted to allow spatial filtering of a return signal and therefore ensuring the confocality of the optical head, with maximized numerical aperture.

16. (Previously Presented) The optical head according to claim 1, wherein the point source is of VCSEL type, having a numerical aperture and a cavity outlet diameter compatible with a confocal system, and associated with a detector placed behind a cavity of the VCSEL.

17. (Currently Amended) The optical head according to claim 1, ~~wherein the optical head comprises~~ further comprising a light window ~~(17)~~ at an outlet of the optical head intended to come into contact with the specimen and in order to carry out an index matching.

18. (Currently Amended) The optical head according to claim 17, wherein the light window has a refractive power function on a focused optical beam.

19. (Currently Amended) The optical head according to claim 1, wherein the optical system comprising the first and second optical devices ~~(12, 13) have~~ has a numerical aperture at least equal to a numerical aperture of the point source.

20. (Currently Amended) A confocal imaging system comprising:

the ~~focusing confocal~~ optical head ~~(4)~~ of claim 1 ~~with integrated beam scanning~~;

~~the source being capable of emitting the excitation beam;~~

a detector ~~device (5)~~ configured to detect an emitted signal; and

an electronic and data processing ~~apparatus~~ unit configured for controlling system operation and for processing ~~an emitted~~ detected signals ~~(6-9) capable of~~ and reconstructing a confocal image of an imaged field.

21. (Currently Amended) The system according to claim 20, wherein the point source comprises [[an]] a first optical fibre ~~(2a)~~ linked to a laser source ~~(1)~~ and a coupling device ~~(3)~~ for coupling said first optical fibre ~~(2a)~~ to [[an]] a second optical fibre ~~(2b)~~ for conveying to and from the optical head ~~(4)~~ and a third optical fibre ~~(2c)~~ for conveying the emitted signal to the detector ~~detection device~~.

22. (Currently Amended) The system according to claim 20, wherein the optical head comprises a VCSEL source and an integral detector, the system comprises a flexible linking device between the optical head and the ~~signal~~ electronic and data processing unit ~~apparatus~~.